

**EXHIBIT 9**

**David Norman Investigation & Remediation Summary Reports**

- Exhibits 2, 4, and 25 to Expert Report of David Norman

Tasco Service Station #30587  
Investigation & Remediation Summary Report

November 2011

not been reported in Well #13A.

### III. SITE INVESTIGATION ACTIVITIES

The following summary of site investigation activities is based on information obtained from previous reports prepared by others as provided by Miller, Axline, & Sawyer, LLC or located on Geotracker.

#### A. TPH gasoline and MTBE Release

Date	Activity	Discovery
September 1997	Soil gas survey performed	8 Soil gas samples were collected; reported TPHg up to 5000 µg/l (ppb), and MTBE up to 2500 ppb below the USTs.
May – June 1998	Tank Removal – Two 10,000 gallon gasoline USTs, one 550 gallon waste oil UST, associated dispensers, and product delivery lines	TPHg was detected in soil samples at a depth of 9.0 feet at 16,000 milligrams per kilogram (mg/kg). MTBE was detected at 780 mg/kg at 9.0 ft.
June 1998	BPI excavates approximately 87 tons of hydrocarbon impacted soil from the bottom of the former gasoline location to a maximum depth of 23 feet bsg, and approximately 63 tons of hydrocarbon impacted soil was removed from the area beneath the former dispenser to a depth of approximately 20 feet bsg. Two soil samples were collected at the bottom of each excavation and analyzed for TPHg, MTBE, and other constituents.	The soil sample collected from the bottom of the former UST location at 23 feet bsg had 4.3 mg/kg TPHg, and 5.3 mg/kg MTBE. The soil sample collected from the bottom of the former dispenser location at 20 feet bsg had 6 mg/kg TPHg, and 0.46 mg/kg MTBE.
November 4, 1998	Fresno County granted closure to the tank removal. Appendix E, Tab 4	NONE
November 2001	Tank Removal – One 12,000 gallon and one 15,000 gallon gasoline USTs, one waste oil UST, associated dispensers, and product delivery lines	TPHg was detected in soil samples at concentrations of up to 23 ppm. MTBE was detected in soil samples at concentrations of up to 0.89 ppm at 19 ft bsg.
	No further Assessment conducted	

#### A. Groundwater Monitoring

Although MTBE has detected in soil gas survey at over 2500 ppb (Pacific Environmental Group, Soil Gas Survey Results, October 29, 1997) and soil samples at concentrations of 750 ppm (ERI, Underground Storage Tanks and Associated Piping Removal

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The absence of complete soil assessments and the lack of plume identification and delineation prevents a comprehensive or complete estimate of the scope or costs necessary to assess or remediate any existing plume.

#### **C. Evidence of off-site sources**

There are several other sites or former stations in the area including the 7-11 Service Station located south of the site at 1596 North Palm Avenue in which soil contamination has not been fully delineated nor a groundwater assessment conducted.

#### **VI. RECOMMENDATIONS**

It is my opinion that based on the lack of a groundwater assessment at the site and the detections of TPHg and MTBE in site soils, that significant data gaps exists concerning the potential for a groundwater impact and a migrating MTBE plume. It has been 13 years since the reported release. If a MTBE impact occurred to groundwater the MTBE plume could have migrated some distance from the site. Therefore, it is recommended that four monitoring wells be installed to evaluate the depth to groundwater, the direction of flow, and initially evaluate the presence of TPHg and MTBE. After six months to one year if a consistent direction of flow is established then up to 5 temporary cone penetration tests point should be advance to groundwater in locations down-gradient from the UST locations. Additional monitoring wells may be necessary after the data from the initial down-gradient wells and the CPT points is evaluated.

The estimated cost to install and sample four monitoring wells quarterly for TPHg and MTBE over a one year period is approximately \$72,000. The additional estimated cost to install five temporary cone penetration tests point is approximately \$32,000. The initial total cost would be approximately \$104,000 (in 2011 dollars).

Current cost for assessment and cleanup activities at this site are not known or published on GeoTracker. It is assumed that these costs would be calculated in to any estimate of total costs to assess and clean up the entire plume.

Given the significant data gaps at this site it is not possible to project which remedial alternative may be appropriate or effective. Therefore, it is not possible to project or estimate clean up costs at this time.

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## **VII. LIMITATIONS**

In preparing this evaluation, Provost & Pritchard Consulting Group relied on information provided by others and information available in public databases. The information provided here is not intended to eliminate the possibility of environmental problems. Because the document review is on-going, the information and opinions presented in this report may be modified as additional information becomes available or is reviewed.

P&P performed its services in a manner consistent with the standards of care and skill ordinarily exercised by members of the profession practicing under similar conditions in the geographic vicinity and at the time the services were performed. No warranty or guarantee, expressed or implied, is made.

## **VIII. REFERENCES**

October 29, 1997, Soil Gas Survey Results, UNOCAL Service Station 3922, 1610 N Palm Ave, Fresno, CA, Pacific Environmental Group, Inc.

May 22, 1998, Contingency Work Plan for Over Excavation of Soil at UNOCAL Service Station 3922, 1610 Palm Avenue, Fresno, CA, Environmental Resolutions, Inc.

October 13, 1998, Underground Storage Tank and Associated Piping and Dispenser Removal at Tosco 76 Service Station 3922, 1610 Palm Avenue, Fresno, CA, Environmental Resolutions, Inc.

February 4, 2002, Environmental Work Related to Underground Storage Tank and Associated Piping and Dispenser Removal, Former Tosco Facility 3922, 1610 North Palm Avenue, Fresno, CA, Environmental Resolutions, Inc.

June 26, 2002, Underground Storage Tank Abandonment Completion, Unocal SS#30587-253922, 1610 North Palm, Fresno, California, Fresno County Human Services System, Department of Community Health.

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provided by Miller, Axline, & Sawyer or located on Geotracker.

#### A. TPH gasoline and MTBE Release

Date	Activity	Discovery
August 1989	Precision Tank Line Testing	Three 10,000 gallon USTs failed test (Appendix E, Tab 2)
March 1991	BSK, Site Assessment- Three borings drilled to a maximum depth of 75 feet. No groundwater encountered.	Selected soil samples analyzed between 15 and 50 feet did not detect TPH gas or BTEX. MTBE was not analyzed (Appendix E, Tab 3).
November 1999	ASR engineering, Site Assessment- leaking underground pipeline from loss of gasoline within the tank dispenser system. One soil sample collected from a 5 foot depth. Laboratory analysis for TPH gas, BTEX, and MTBE.	TPH gas was 31,000 mg/kg, and MTBE was 920 mg/kg (Appendix E, Tab 4)
May 2004	E2CR, Site Assessment- upgrade of fuel dispenser-soil sampling during dispenser upgrade on two separate dates. Laboratory analysis for TPH gas, BTEX, and fuel oxygenates. A total of six samples were collected from 4 to 5 feet bsg.	TPH gas was detected at concentration ranging from < 1 mg/kg to 6,022 mg/kg. MTBE was detected in concentrations ranging from <0.05 to 164 mg/kg. (Appendix E, Tab 5)
April 2007	HerSchy Environmental, Site Assessment-Upgrade of UST system. Nine soil boring were advance to 4 to 5 foot depth. Laboratory analysis for TPG gas, BTEX, and MTBE	TPH gas was detected at concentration ranging from < 1 mg/kg to 3,800 mg/kg. MTBE was detected in concentrations ranging from <0.01 to 27 mg/kg. (Appendix E, Tab 6)
February 2008	RWQCB requests workplan for vertical and horizontal assessment	(Appendix E, Tab 7)
June 2010	RWQCB notification letter of overdue submittals	(Appendix E, Tab 8)

#### B. Groundwater Monitoring

No groundwater monitoring wells have been installed at this facility.

### IV. REMEDIATION ACTIVITIES

The following summary of site remediation activities is based on information obtained from previous reports prepared by others.

#### A. Soil Remediation

No information was reviewed that indicated soils were over excavated and disposed or any type of in-situ soil remediation has been conducted. Historic soil analytical data is included in Appendix B.

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protect the City's drinking water supply. Given the significant data gaps at this site it is not possible to project which remedial alternative may be appropriate or effective. Therefore it is not possible to project or estimate clean up costs at this time.

## **VII. LIMITATIONS**

In preparing this evaluation, Provost & Pritchard Consulting Group relied on information provided by others and information available in public databases. The information provided here is not intended to eliminate the possibility of environmental problems. Because the document review is on-going, the information and opinions presented in this report may be modified as additional information becomes available or is reviewed.

P&P performed its services in a manner consistent with the standards of care and skill ordinarily exercised by members of the profession practicing under similar conditions in the geographic vicinity and at the time the services were performed. No warranty or guarantee, expressed or implied, is made.

## **VIII. REFERENCES**

April 17, 1991, Subsurface Environmental Investigation, Beacon Station No. 538, Fresno California, BSK & Associates

November 29, 1999, Soil Sampling and Chemical Analyses Report Gasoline Piping Leak, Valley Gas, 2139 S. Elm Avenue, Fresno, California, ASR Engineering, Inc.

May 18, 2004, Valley Gas Food Mart, 2139 Elm Street, Fresno, California, Environmental Engineering Consulting & Remediation (E2CR)

April 9, 2007, Results of Soil Sampling, Valley Gas, 2139 South Elm Street, Fresno, California, HerSchy Environmental, Inc.

February 27, 2008, Underground Storage Tank Release, Valley Gas, 2139 South Elm Avenue, Fresno, Fresno County, Regional Water Quality Control Board-Central Valley Region.

June 7, 2010, Overdue Submittals-Underground Storage Tank Release, Valley Gas, 2139 South Elm Avenue, Fresno, Fresno County, Regional Water Quality Control Board-Central Valley Region.

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wells to date.

**III. SITE INVESTIGATION ACTIVITIES**

The following summary of site investigation activities is based on information obtained from previous reports prepared by others as provided by Miller, Axline, & Sawyer, LLC or located on Geotracker.

**A. TPH gasoline and MTBE Release**

Date	Activity	Discovery
February 1985	Subsurface investigation of existing USTs. Three borings were drilled in proximity of UST. Two were drilled to 35 feet bsg, and one was drilled to 85 feet bsg to collect groundwater sample. A total of 14 soil samples and one groundwater sample were analyzed for TPH gas and diesel, and BTEX.	No petroleum constituents were detected in the soil samples analyzed. BTX was detected in the groundwater sample.
June 1998	4 USTs removed and replaced. Twelve soil samples were collected for analysis from the former UST excavation from depths ranging from 15 to 21 feet bsg. Two soil samples were also collected in the area of the new UST location at 16 feet bsg. Soil samples were also collected below the product piping and dispensers at depths of 4 to 5 feet bsg. Soil samples were analyzed for TPHg, BTEX, MTBE, and other constituents.	TPHg was detected in nine of the 12 dispenser/line samples at concentrations ranging from 87 to 5600 ppm. MTBE was reported at concentrations ranging from 0.011 to 81 ppm at a depth of 21 feet bsg.
November 2001	Subsurface assessment-Four borings were drilled to depth of 40 to 60 feet bsg. Seventeen soil samples were analyzed for TPHg, BTEX, MTBE, and other constituents.	TPHg was detected at 1,300 ppm at 30 feet bsg, and at 550 ppm at 15 feet bsg. MTBE was detected in two of the borings at low concentrations to a depth of 40 and 60 feet bsg.
January 2002	Regulatory response letter from Fresno County Department of Community Health.	MTBE contamination - referred case to RWQCB.
February 2002	Letter response from RWQCB requesting workplan to further assess petroleum hydrocarbon impacts to soil and groundwater	The Mill Ditch is immediately south of the site across McKinley Avenue. RWQCB comments that leakage and infiltration of water from Mill Ditch results in the presence of seasonal saturated zone in the upper soil profile.

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July 21, 1998, Well Abandonment Report for Beacon #615, 1625 Chestnut Avenue, Fresno, California, Doulos Environmental Company

September 27, 1998, Tank Closure Report, Beacon Station No. 615, 1625 Chestnut Avenue, Fresno, California, El Dorado Environmental, Inc.

July 3, 2000, Workplan for Assessment of Petroleum Hydrocarbons in Soil, Ultramar Station #615, 1625 North Chestnut Avenue, Fresno California, BSK & Associates

January 10, 2002, Assessment Report, Service Station No.3615, 1625 Chestnut Avenue, Fresno, California, 93703, A.E. Schmidt Environmental

February 8, 2002, Underground Storage Tank Release, Arco #615, 1625 N. Chestnut Ave., Fresno, Fresno County, California Regional Water Quality Control Board-Central Valley Region

May 21, 2002, Subsurface Investigation Workplan, Service Station No.3615, 1625 Chestnut Avenue, Fresno, California, 93703, A.E. Schmidt Environmental

June 28, 2002, Work Plan Review and Comment, Beacon/Arco #615, 1625 N. Chestnut Ave., Fresno, Fresno County, California Regional Water Quality Control Board-Central Valley Region

December 23, 2002, Additional Assessment Report, Service Station No.3615, 1625 Chestnut Avenue, Fresno, California, 93703, A.E. Schmidt Environmental

August 14, 2003, Leaking Underground Storage Tank Site, Beacon/Arco #615, 1625 N. Chestnut Ave., Fresno, Fresno County, California Regional Water Quality Control Board-Central Valley Region

September 25, 2003, Case Closure-Leaking Underground Storage Tank Site, Beacon/Arco #615, 1625 N. Chestnut Ave., Fresno, Fresno County, California Regional Water Quality Control Board-Central Valley Region

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